L Number	Hits	Search Text	DB	Time stamp
2	534	(hard adj mask) with plasma	USPAT; US-PGPUB	2003/04/19 14:15
4	453	((hard adj mask) with plasma) and (opening or hole or via or trench)	USPAT; US-PGPUB	2003/04/19 14:11
5	195	(((hard adj mask) with plasma) and (opening or hole or via or trench)) and copper	USPAT; US-PGPUB	2003/04/19 14:11
6	174	((((hard adj mask) with plasma) and (opening or hole or via or trench)) and copper) and @ad<=20020117	USPAT; US-PGPUB	2003/04/19 14:15
7	160	(((((hard adj mask) with plasma) and (opening or hole or via or trench)) and copper) and @ad<=20020117) not ibm	USPAT; US-PGPUB	2003/04/19 14:13
8	4	((((((hard adj mask) with plasma) and (opening or hole or via or trench)) and copper) and @ad<=20020117) not ibm) and (densification or densify)	USPAT; US-PGPUB	2003/04/19 14:36
9	622	plasma same (densification or densify)	USPAT; US-PGPUB	2003/04/19 14:15
10	593	(plasma same (densification or densify)) and @ad<=20020117	USPAT; US-PGPUB	2003/04/19 14:15
11	39	((plasma same (densification or densify)) and @ad<=20020117) and (hard adj mask)	USPAT; US-PGPUB	2003/04/19 14:29
12	304	(low adj k) same (hard adj mask)	USPAT; US-PGPUB	2003/04/19 14:30
13	135	(low adj k) with (hard adj mask)	USPAT; US-PGPUB	2003/04/19 14:30
14	50	((low adj k) with (hard adj mask)) same plasma	USPAT; US-PGPUB	2003/04/19 14:31
15	0	(((low adj k) with (hard adj mask)) same plasma) and densify	USPAT; US-PGPUB	2003/04/19 14:31
16	50	((low adj k) with (hard adj mask)) same plasma	USPAT; US-PGPUB	2003/04/19 14:31
17	622	plasma same (densification or densify)	USPAT; US-PGPUB	2003/04/19 14:37
18	291	plasma with (densification or densify)	USPAT; US-PGPUB	2003/04/19 14:37
19	13	plasma with (densification or densify) same (low adj k)	USPAT; US-PGPUB	2003/04/19 14:42
20	1	resist adj strip with reducing	USPAT; US-PGPUB	2003/04/19 14:44
21	2	resist adj strip with (non adj oxidizing)	USPAT; US-PGPUB	2003/04/19 14:45

US-PAT-NO: 6458648

DOCUMENT-IDENTIFIER: US 6458648 B1

TITLE: Method for in-situ removal of side walls in MOM capacitor formation

---------- KWIC ---------

The photoresist material 36 is then removed, preferably in a **non-oxidizing** plasma **resist strip,** such as a plasma strip employing hydrogen. A suitable plasma is generated from forming gas (a mixture of 96% nitrogen and 4% hydrogen). An oxidizing strip is preferably not used as this tends to oxidize the titanium nitride layer.

A layer of titanium nitride for the first electrode 18 was deposited on an 8 inch silicon wafer by chemical vapor deposition. A layer of silicon dioxide about 450 .ANG. thick was deposited on the titanium nitride layer for forming the capacitor dielectric 20. The silicon dioxide layer was patterned with photoresist 36 to define the dimensions of the capacitor. The wafer was transferred to an RIE tool and subjected to a CF.sub.4 etch. The power used was 850 watts, the pressure 40 mTorr, and the flow rate of CF.sub.4 was 20 sccm. The end point was detected at about 15-18 seconds. The reactor was quickly changed to a plasma containing SF.sub.6 in argon. The flow rate was 22 sccm SF.sub.6 and 60 sccm argon, the pressure was 200 mTorr, and the power 300 watts. The reactor was run for about 10 seconds to remove the sidewalls. A **non-oxidizing** plasma **resist strip** was used to remove the photoresist. The **non-oxidizing resist strip** was carried out using forming gas (a mixture of nitrogen and hydrogen, hydrogen being the active species). Scanning electron micrographs of the dielectric after removal of the photoresist show the edges

to be substantially free of sidewalls. Similar micrographs taken using an anisotropic etching process without the second step, isotropic etch, revealed substantial sidewalls overlapping the dielectric.

DOCUMENT-IDENTIFIER: US 20020142104 A1

TITLE: Plasma treatment of organosilicate layers

---------- KWIC ---------

20010328

[0012] The organosilicate layer is compatible with integrated circuit fabrication processes. In one integrated circuit fabrication process, the organosilicate layer is used as a bulk insulating material in a dual damascene structure. For such a structure, a preferred process sequence includes depositing a barrier layer on a metal layer formed on a substrate. After the barrier layer is deposited on the substrate, a first organosilicate layer is formed thereon. A **hard mask** layer is formed on the first organosilicate layer. The **hard mask** layer is patterned to define vias therein. Thereafter, a second organosilicate layer is formed on the patterned **hard mask** layer. The second organosilicate layer is patterned to define interconnects therethrough. The interconnects formed in the second organosilicate layer are positioned over the vias defined in the **hard mask** layer. After the second organosilicate layer is patterned, the vias defined in the **hard mask** layer are transferred into the first organosilicate layer. Thereafter, the dual damascene structure is completed by filling the vias and interconnects with a conductive material.

[0043] Additionally, the **plasma** treatment is believed to **densify** the organosilicate layers, as well as make them less hydrophobic with improved surface wetting properties. Also, the **plasma** treatment is believed to improve the etch selectivity of the organosilicate layer with respect to untreated layers.